



CTX-Configuration-Store User Guide

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Versions

Document Revisions

The following revisions have been made to this document

Date	Revision	Notes
28/05/2019	1.0	First Release

Module Versions

The following revisions have been made to this document

Date	Revision	Notes
28/05/2019	1.0	<p>Creation of:</p> <ul style="list-style-type: none">• Config-CGD-Get-DB-Server• Config-CQD-Query-DB• Config-CGP-Get-Parameters• Config-CEV-Encrypt-Value• Config-GCPQ-Generate-Config-Params-Queries• Config-GPVDQ-Generate-Parameter-Value-Delete-Query• Cortex-ConfigStore-Management-UI

Preface

About this Manual

This document is a user guide for the CTX-Configuration-Store module.

Audience

The audience for this document is those wanting to understand how to use CTX-Configuration-Store module.

Related Material

Document
CTX-Configuration-Store – Deployment Plan
CTX-Configuration-Store.studiopkg

Abbreviations used in this Document

OCI	Orchestration Communication Interface
DB	Database

Requirements

The CTX-Configuration-Store module requires the following:

- Minimum Cortex v6.4 installed on the Cortex Application Server
- SQL Cortex-Configuration-Store-Install database installed

📖 If you have a previous Cortex Configuration Store (beta version before the GitHub release) please contact Cortex to obtain the migration document and scripts. These will allow you to migrate existing configuration data into this Configuration Store and continue using it as before.

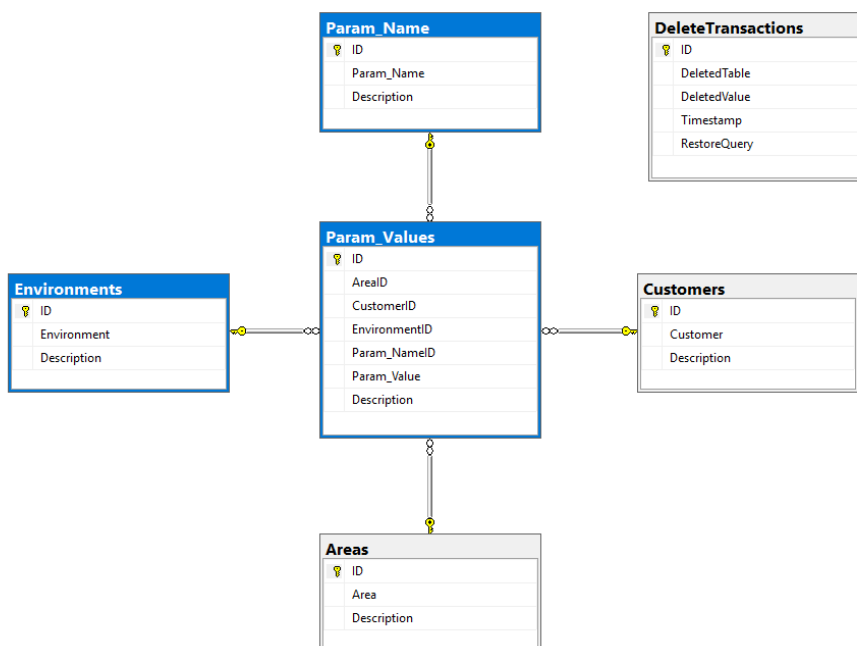
Integration

Integration with Third-Party Systems

For the flows and subtasks to work in the CTX-Configuration-Store module, the Cortex Config Store database and schema needs to exist on the server containing the Cortex databases. Instructions how to set this up are provided in the 'CTX-Configuration-Store – Deployment Plan'.

The tables involved in the Cortex Configuration Store schema are:

- Customers – Table containing the details on the customer
- Area – The area where the parameters are valid for. For example, 'Generic' could apply to all processes, 'SharePoint' would apply to interacting with SharePoint
- Environment – The environment the config parameters are valid for. Generally, one of the following:
 - Development
 - Pre-production
 - UAT
 - Production
- Param_Name – The name of the config parameters. For example, 'External-DB-Server' is a parameter where the name of a server where other databases are stored.
 - NOTE: The actual value (in the example, the server name) would not be stored here, instead it would be stored in 'Param_Values'.
- Param_Values – Stores parameter values and link to Customers, Areas and Environments
- DeleteTransactions – Stores the deleted configuration items and the restore queries.



Integration with Existing Infrastructure

None Required.

1 Configuration Management Overview

'Configuration' is the setting of parameters that customise the behaviour of a Cortex solution. Examples include:

- Database connection strings
- IP Addresses
- Warning thresholds
- Other process specific

The Configuration Management module allows the storage of configuration data on a database and provides all the required subtasks to access and modify it. In addition, it provides a user interface implemented in Cortex LivePortal to manipulate the data.

1.1 Using the Module

Once the .studiopkg file has been imported, navigate to the 'Cortex-Configuration-Management-UI' flow and set the global variable 'G_DB_Name' to an appropriate value. This is the SQL Server Database Name which the Cortex Config store was installed as. By default this value is set to 'Cortex-Configuration-Store'. If the database was deployed with the default name, no update is required.

All functionality is handled using the Cortex Database Interface service user. This user must have the following permissions to the Cortex Config Store Database:

- db_datareader
- db_executor

The Configuration Management module has the below capabilities:

1. Configuration Management, which is achieved using LivePortal. See section 1.2
2. Using the Configuration, by using the subtask Config-CGP-Get-Parameters to get the configuration based on the Area, Environment and/or Costumer.

1.2 User Experience

1.2.1 Cortex-ConfigStore-Management-UI

The 'Cortex-Configuration-Management-UI' is used by the user to create, edit and delete:

- Customers
- Areas
- Environments
- Parameters
- Parameters Values

1. When the flow starts, the user is presented with the **homepage**. This page allows the user to view the current configuration and select one of the following options:

- Add Parameter Values
- Manage...
 - Areas
 - Customers
 - Environments
 - Parameters
 - Parameters Values
- Delete ...
 - Areas (only visible for Advanced version)
 - Customers (only visible for Advanced version)
 - Environments
 - Parameters
 - Parameters Values

Configuration Management

Select what to modify from the following options.
 The next UI will allow you to select whether to Add New or Modify Existing.

Add Parameters Values
 Manage ...
 Delete ...

Show Current Configuration
 ☒

AREA	CUSTOMER	ENVIRONMENT	PARAM_NAME	DESCRIPTION	PARAM_VALUE
Filter Area	Filter Custo...	Filter Enviro...	Filter Param...	Filter Description	Filter Param...
Generic			Email_Server	The email server to send emails to operations team.	azure-server-01

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 1 items in 1 pages

1.2.1.1 Add Parameters Values

To add Parameter values there must be a minimum of one Area and one Parameter already in the configuration database. Customers and Environment are optional as configuration can be created and mapped to only an area.

1. When the user selects to Add Parameter Values, a set of panels will be presented so that the user can select which mapping the configuration parameter(s) should have.
 - a. The user must select one or more Areas
 - b. Optionally the user can select one or more Environments and/or one or more Customers

 Each combination of Area/Environment/Customer will be created to allow a bulk add of parameters

Config - Selection

Using the checkboxes below, select which components to add Configuration items for. Areas are required, and Customers / Environments are optional.

☐ Customers
 ☐ Environments

Config - Areas

Select required Area(s)

AREA_NAME	DESCRIPTION
Filter Area_name	Filter Description
<input type="checkbox"/> Generic	Generic configuration for all flows

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Config - Customers

Config - Environments

[Homepage](#)
[Select Parameters >>](#)

- After selecting the required Areas, Customers and/or Environments, the user is presented with the Parameters selection screen.

Config Parameters

Select required Parameter(s)
Hold Ctrl to select multiple parameters

PARAM_NAME	DESCRIPTION
Filter Param_name	Filter Description
<input type="checkbox"/> Email-Server	An email server IP or hostname

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[<< Reselect Mapping](#)
[Homepage](#)
[Configure Values >>](#)

- After selecting the required Areas, Customers, Environments and parameters to be configured, the user is presented with the edit screen.

- The screen will display all possible combinations of Area(s)/ Environment(s)/ Customer(s)/ Parameter(s). If one of the mappings already exists, it will be displayed and the user can either modify or leave it as is (no update will be done)
- It is possible to select specific values to be encrypted before being stored in the database

Update Config Entry in DB

AREA	PARAM_NAME	DESCRIPTION	PARAM_VALUE	ENCRYPT
Filter Area	Filter Param_name	Filter Description	Filter Param_value	<input type="checkbox"/>
Generic	Email-Server	Generic email server to be used by all flows	azure-server-01	<input type="checkbox"/>

Page size: 10 1 items in 1 pages

Item has been updated

Edit the values for the current parameter in the grid above, and press the tick to the right of the row.
 Press 'Continue' when finished updating all parameters.
 The changes will not be made until all are processed, so clicking 'Homepage' or 'Reselect Mapping' will not save any of the changes made.
 Any values left blank will not be inserted.

[<< Reselect Parameters](#)
[Homepage](#)
[Save >>](#)

4. After clicking Save >> the user will be presented with the results table

Config Results

The following items were either new or updated configuration entries which have been added to the DB based on the user selection:

AREA	PARAM_NAME	DESCRIPTION	PARAM_VALUE	ENCRYPT
Filter Area	Filter Param_name	Filter Description	Filter Param_value	<input type="checkbox"/>
Generic	Email-Server	Generic email server to be used by all flows	azure-server-01	<input type="checkbox"/>

Page size: 100 1 items in 1 pages

[Homepage](#)
[End](#)

1.2.1.2 Manage Functionality (Areas, Environments, Customers, Parameters)

The manage user experience is the same when editing **Areas**, **Customers**, **Environments** or **Parameters**.

- When the user selects to manage the configuration, a table is displayed with the current configuration. 3 options are displayed:
 - Homepage**, this will navigate back
 - Add New**, to add a new configuration item of that type
 - Modify Existing**, to modify the existing configuration items of that type

Configuration Management - Param_Name

PARAM_NAME	DESCRIPTION
Filter Param_name	Filter Description

Email-Server An email server IP or hostname

Page size: 100
 1 items in 1 pages

[Homepage](#)
[Add New](#)
[Modify Existing](#)

- If the user selects **Add New**, a new screen is presented with two panels. The one of the right side presents the existing configuration items of that type and the one on the left allows the user to add new ones

Add New Param_Name

You have selected to Add to the Configuration Param_Names.

Click Add new record in the table below to insert the new item value and then click the Tick button to save. You can modify or delete the inserted values by using the row buttons.

Click confirm when finished adding to insert the items to the DB.

Add new record

PARAM_NAME	DESCRIPTION
Filter Name	Filter Description

No records to display

Page size: 20
 0 items in 1 pages

View Current Param_Names

PARAM_NAME	DESCRIPTION
Filter Param_name	Filter Description

Email-Server An email server IP or hostname

Page size: 20
 1 items in 1 pages

[<< Back](#)
[Homepage](#)
[Confirm >>](#)

- If the user selects **Modify Existing**, a new screen is presented the existing configuration items of that type and allows the user to edit them

Configuration Management - Modify Param_Name

Modify Param_Names

You have selected to modify the Configuration Param_Name.

The existing data from the DB is shown in the grid below.

Please edit the required items in the grid:

PARAM_NAME	DESCRIPTION
Filter Param_name	Filter Description

Email-Server An email server IP or hostname

Page size: 10
 1 items in 1 pages

[<< Back](#)
[Homepage](#)
[Confirm >>](#)

1.2.1.3 Manage Functionality (Parameter Values)

1. When the user selects to edit **Parameter Values** configuration, a table is displayed with the current parameter values and its linked configuration (Areas, Customers and Environments)

Configuration Management - Modify ParameterValue

Modify ParameterValues

You have selected to modify the Configuration ParameterValue.

The existing data from the DB is shown in the grid below.


Please edit the required items in the grid:

AREA	CUSTOMER	ENVIRONMENT	PARAM_NAME	DESCRIPTION	PARAM_VALUE	ENCRY PT
Filter Area	Filter Custo...	Filter Envir...	Filter Para...	Filter Description	Filter Para...	<input type="checkbox"/>
Generic			Email-Server	Generic email server to be used by all flows	azure-server-01	<input type="checkbox"/>

Page size: 10 1 items in 1 pages

<< Back Homepage Confirm >>

2. The user can edit the required values and commit the changes

 Only rows with changes will be processed. Changes are allowed on the Description, Param_Value and Encrypt column.

1.2.1.4 Delete Functionality

The delete user experience is the same when deleting **Areas**, **Customers**, **Parameters** or **Parameter Values**.

1. When the user selects to delete configuration, a double table is displayed with the current configuration of that item on the left side.
2. The items the user wishes to delete should be moved to the right side of the table.

Configuration Management - Delete Area

You have selected to delete the Configuration Area.

The existing data from the DB is shown in the grid below.

Please select the items to delete from the below options. Note that this may affect current flows.

AREA	DESCRIPTION
Filter Area	Filter Description

No records to display.

Page size: 10 0 items in 1 pages

AREA	DESCRIPTION
Generic	Generic configuration for all flows

Page size: 10 1 items in 1 pages

Homepage Continue >>

- When deleting an item which contains associated configuration, a new page displays all associated configuration which is also going to be deleted. The user can **Confirm >>** to delete both the item(s) selected before and these or **Cancel** the deletion.

Configuration Management - Delete Area - Associated Configuration

The following items are also going to be deleted from PARAM_VALUES table as these are related to the Areas being deleted:

AREA	CUSTOMER	ENVIRONMENT	PARAM_NAME	PARAM_VALUE
Filter Area	Filter Customer	Filter Environment	Filter Param_name	Filter Param_value
Generic			Email-Server	azure-server-01

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Page size: 10

1 items in 1 pages

Please Confirm or Cancel the deletion of these and the selected Areas.

Cancel

Confirm >>

- After the deleting is performed a confirmation screen is displayed.

Delete Results

The following items were deleted from Areas:

AREA	DESCRIPTION
Filter Area	Filter Description
Generic	Generic configuration for all flows

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Page size: 10

1 items in 1 pages

The following items were deleted from PARAM_VALUES as these were related to the above Areas:

AREA	CUSTOMER	ENVIRONMENT	PARAM_NAME	PARAM_VALUE
Filter Area	Filter Customer	Filter Environment	Filter Param_name	Filter Param_value
Generic			Email-Server	azure-server-01

<<

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>>

Page size: 10

1 items in 1 pages

Homepage

End

2 Configuration Management Subtasks

2.1 Config-CGD-Get-DB-Server

2.1.1 Overview

The Config-Get-DB-Server subtask returns the server where the Reactor database is located.

2.1.2 Inputs

This subtask has no inputs.

2.1.3 Outputs

Output Variables	Type	Description
CGDS_o_SQL-Server	Text	The name of the server where the Reactor database is located.

2.2 Config-CQD-Query-DB

2.2.1 Overview

The Config-CQD-Query-DB subtask connects to a SQL database with the connection string specified and executes the SQL query specified.

Exceptions will be raised if:

- The connection string is not supplied
- The connection string is not valid
- The query is not supplied
- The query is not valid

2.2.2 Inputs

Input Variables	Type	Description
CQD_i_Connection-String	Text	The connection string to the database. REQUIRED. Example: server=localhost;database=Reactor;trusted_connection=true
CQD_i_Query	Text	The SQL query to run on the database. REQUIRED. Example: SELECT * FROM CFG_Globals
CQD_i_results-as-list-boolean	Text	A True or False text value to control if the output should be given as a list or a table. Default value is False Example: False

2.2.3 Outputs

Output Variables	Type	Description
CQD_o_Results	Table	A table containing the result from the SQL query. Only populated if the input CQD_i_results-as-list-boolean is set to False.
CQD_o_Results-As-List	List	A list containing the result from the SQL query Only populated if the input CQD_i_results-as-list-boolean is set to True.

2.3 Config-CGP-Get-Parameters

2.3.1 Overview

The Config-Get-Parameters returns all parameters assigned to the Area/Customer/Environment combination specified.

Exceptions will be raised if:

- An Area has not been supplied

2.3.2 Inputs

Input Variables	Type	Description
CFP_i_Area	Text	The Area to return the parameters for. REQUIRED Example: Azure
CFP_i_Customer	Text	The Customer to return the parameters for.
CFP_i_Environment	Text	The Environment to return to parameters for.
CFP_i_SQL-Server	Text	The name of the server where the Cortex Config Store database. If not supplied, 'localhost' will be used. Example: localhost
CFP_i_DB-Name	Text	The name of the Cortex Config Store database. If not supplied, 'Cortex-ConfigStore' will be used. Example: Config-Database

2.3.3 Outputs

Output Variables	Type	Description
CFP_o_Retrieved-Config	Structure	Config parameters assigned to the Area/Customer/Environment specified

2.4 Config-CEV-Encrypt-Value

2.4.1 Overview

Encrypts a value using the Cortex Flow API.

2.4.2 Inputs

Input Variables	Type	Description
EV_i_Flow-API-Config-Path	Text	The path where the Cortex Flow API is installed. Default value is "C:\Program Files (x86)\Cortex\Cortex Flow Interface Service\"

		Example: Azure
EV_i_Value-To-Encrypt	Text	the value to be encrypted. REQUIRED. Example: Cortex

2.4.3 Outputs

Output Variables	Type	Description
EV_o_Encrypted-Value	Text	The encrypted value.

2.5 Config-GCPQ-Generate-Config-Params-Queries

2.5.1 Overview

This subtask is used as part of the configuration data generation. It is run for both environments and customers.

If they are required, the subtask will add to the SELECT query, the INSERT query headers, the JOIN query and the WHERE Clause for the Select query.

2.5.2 Inputs

Input Variables	Type	Description
GCPQ_i_Link	Text	Text value containing either Customer or Environment. REQUIRED Example: Customer
GCPQ_i_Insert-Query-Header	Text	Text value containing the start of the insert query. REQUIRED Example: INSERT INTO Param_Values (AreaID, ParamID
GCPQ_i_Select-Clauses	Text	Text value containing the start of the select query. REQUIRED Example: SELECT Area
GCPQ_i_Selected-Values	List	List containing the values selected for the specific link. REQUIRED Example: ["Dev","Prod"]
GCPQ_i_Read-Only-Columns	List	List containing the read only columns for the grid being displayed to the

		user during the addition of new configuration values. REQUIRED Example: ["Area", "PARAM_NAME"]
--	--	---

2.5.3 Outputs

Output Variables	Type	Description
GCPQ_o_INSERT-Query-Header	Text	Text value containing the updated insert query.
GCPQ_o_SELECT-Clauses	Text	Text value containing the updated insert select query.
GCPQ_o_Selection-CSV	Text	Text value containing where clause for the specific link.
GCPQ_o_Read-Only-Columns	List	List containing the updated read only columns for the grid being displayed to the user during the addition of new configuration values.

2.6 Config-GPVDQ-Generate-Parameter-Value-Delete-Query

2.6.1 Overview

This subtask is used as part of the configuration data generation. It is used to generate the delete queries for parameter values.

2.6.2 Inputs

Input Variables	Type	Description
GPVDQ_i_Items-To-Delete	Table	Table of parameter values selected to be deleted. Table requires columns: Id, Area, Customer, Environment, ParamName, Description, ParamValue REQUIRED

2.6.3 Outputs

Output Variables	Type	Description
GPVDQ_o_Delete-Query	Text	Text value containing the delete query.
GPVDQ_o_Delete-Transactions-Query	Text	Text value containing the rollback query to be inserted in the transactions table.

3 LivePortal UI Flows

3.1 Cortex-ConfigStore-Management-UI

3.1.1 Overview

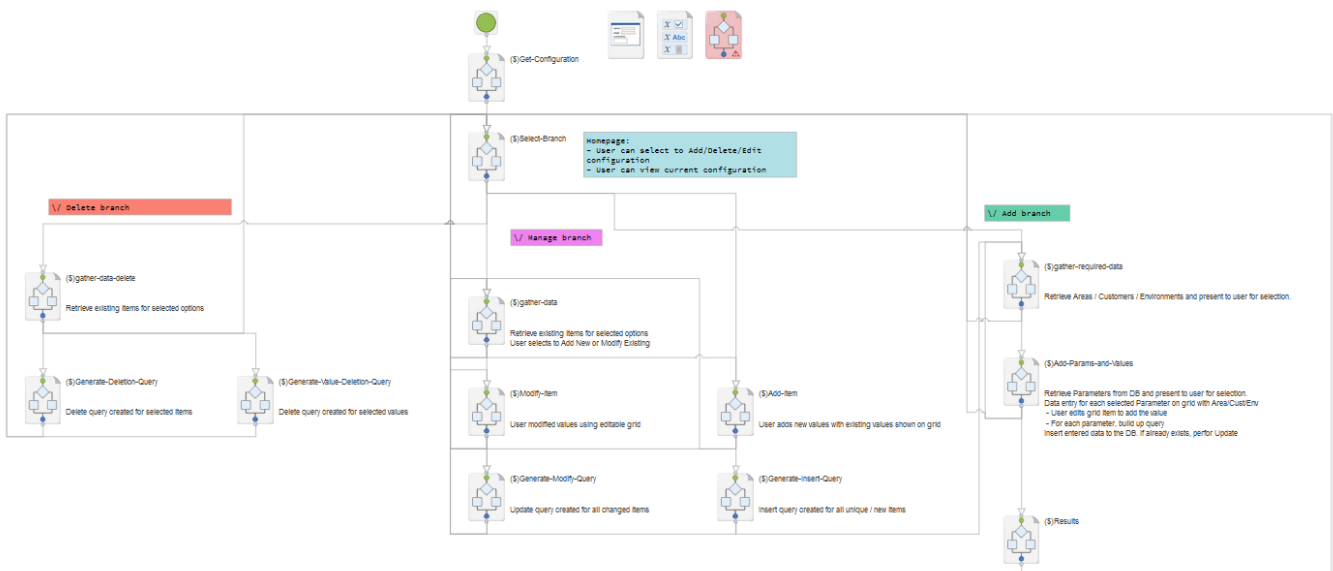
The 'Config-Manage-Configuration' flow is used by the user to create, edit and delete:

- Customers
- Areas
- Environments
- Config_Parameters
- Config_Values

The delete option is used to delete items from the Cortex Config Store. Rows from the following tables can be deleted:

- Customers
- Areas
- Environments
- Param_Name
- Param_Values

3.1.2 States



- Generic Branch
 - Get-Configuration

Retrieves the database connection string. Uses the same SQL server as the Cortex reactor database and the database name specified in `g_db-name`.

- Select-Branch

The user will be displayed with a grid with the current configuration and a menu bar with the available options.

- Delete Branch

- Gather-Data-Delete

The user will be displayed a double grid with all items in the left grid. The user will have to move all items to delete to the right grid and confirm the update.

- Generate-Deletion-Query

A query is generated and executed to delete either Areas, Customers, Environments or Configuration Parameters. Once this is done, the user will be displayed a table containing the data which is now deleted in the database.


- Generate-Value-Deletion-Query

A query is generated and executed to delete either Parameter Values. Once this is done, the user will be displayed a table containing the data which is now deleted in the database

- Manage Branch

- Gather-Data

The user will be displayed all information in the table they selected. They will be able to either select the row(s) they would like to update (where they will be taken to the 'Modify Item' state) or add a new row (where they will be taken to the 'Add Item' state).

 **Note:** If the table selected is blank, the user will be instructed they are only able to navigate to the 'Add Item' state

- Modify-Item

The user will be presented a table containing all rows selected in the 'Gather Data' state.

- Generate-Modify-Query

A query is generated and executed to update all rows in the database the user has made modifications to. Once this is done, the user will be displayed a table containing the data from which have been updated in the database.

- Add-Item

The user will be presented a textbox where they are able to input a new item. The user will have to click 'Add', the item will be then displayed in a listbox to the user to the right of the textbox. Once the user has added all the required items to the listbox, the user will have to click 'Confirm' to add all items in the listbox to the database.

- Generate-Insert-Query

A query is generated and executed to insert all rows in the user has created in the 'Add Item' state. Once this is done, the user will be displayed a table containing the data from which have been inserted in the database

- Add Branch

- Gather-Required-Data

Returns all Customers, Areas and Environments in the database and the user will select which Customer, Area and Environment they are going to assign parameters to.

- Add-Parameters-and-Values

The user selects which parameters to link to the mappings selected in the previous state. Any parameters that are already linked to these will be shown with the current values. The user can either leave the configuration untouched or perform modifications.

- Results

The user is presented a results screen showing the updated/new data.